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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/765,142	01/18/2001	Richard Sayre	OSU1159-139	7817

8698 7590 06/04/2003  
STANDLEY & GILCREST LLP  
495 METRO PLACE SOUTH  
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DUBLIN, OH 43017

EXAMINER

EVANS, CHARESSE L

ART UNIT	PAPER NUMBER
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1615

DATE MAILED: 06/04/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/765,142

Applicant(s)

SAYRE ET AL.

Examiner

Charesse L. Evans

Art Unit

1615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 14-22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 and 13 is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Action Summary*

Acknowledgement is made of the receipt of applicant's request to rescind previous nonpublication request, filed February 19, 2002.

Acknowledgement is made of the receipt of applicant's amendment and remarks, filed March 11, 2003.

Acknowledgement is made of applicant's election, without prejudice of Group I, which includes claims 1-13, pursuant to restriction requirement of February 6, 2003.

Acknowledgement is made of the cancellation of claims 14-22.

Claims 1-13 are pending in this action.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter

of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darnall et al (US 4,992,207). The claims are directed to a biodegradable trace metal binding system that effectively delivers chromium, cobalt, copper, iron, manganese, molybdenum, selenium and zinc to animals, within foodstuffs.

Darnall teaches a method for the selective extraction of certain metal ions, such as silver, platinum, gold, mercury (Abstract), chromium, copper, zinc, cobalt or selenium (column 4, lines 8-11), from aqueous solutions containing these ions. A wide variety of microorganisms such as Thiobacillus and Chlamydomonas, have the ability to bind these metals to their cell surfaces (column 3, lines 61-66). Particularly favored microorganisms for use in the disclosed procedure are unicellular algae, both green and blue-green (column 4, lines 47-49) because they are very simple and inexpensive to grow.

The prior art does not expressly teach the claimed species of Chlamydomonas reinhardtii, however, the art discloses that because the ability of a particular metal to

bind at a specific pH appears to be a function of pH-metal interaction rather than a function of the type of cell used. Therefore, one of ordinary skill in the art would be motivated to utilize various strains of the genus *Chlamydomonas* with the expectation that any microorganism capable of binding metals may be used in the process, thus allowing the maintenance of an inexpensive process.

The prior art reference does not expressly teach that the metal-bound protein be admixed into animal foodstuff. However, the art discloses that these metal-bound substances have applications in areas such as water treatment and mineral processing (column 7, lines 51-54). Therefore, it would be obvious to one of ordinary skill in the art to apply these materials to various substances, thus optimizing the nutritional intake of the animal.

#### *Allowable Subject Matter*

Claims 1-6 and 13 are allowed. The closest prior art fails to teach a metal-bound adduct of transgenic algal cells bound with at least one metal, admixed into animal foodstuffs.

#### *Conclusion*

No claims are allowed at this time.

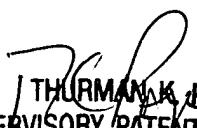
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charesse L. Evans whose telephone number is 703-308-6400. The examiner can normally be reached on Monday - Thursday 7:00a - 4:30p; Alternating Fridays 7:00a - 3:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on 703-308-2927. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

Charesse L. Evans  
Examiner  
Art Unit: 1615

June 2, 2003

  
THURMAN K. PAGE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600